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AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): An optimum command producing apparatus configured to receive a command, process the command in such a manner that a controlled object implements a desirable operation and output an optimum command value to a servo control apparatus, the apparatus comprising:

an N-order filter processing section configured to carry out an N-order filter processing for the command and calculate values from a ~~1-order~~ 1st order differential value to an ~~(N-1)-order~~ $(N-1)^{th}$ order differential value of the command subjected to the filter processing, wherein N is an integer of 2 or more; and

an arithmetic unit configured to calculate a value obtained by multiplying each of the values calculated by the N-order filter processing section by a corresponding one of gains, and

wherein N is equal to or greater than a value defined by subtracting an order of the command from an order of denominator of a transfer function of an approximation model that represents the controlled object with Laplace operator.

2. (currently amended): An optimum command producing apparatus configured to receive a command, process the command in such a manner that a controlled object implements a desirable operation and output an optimum command value to a servo control apparatus, the apparatus comprising: